

Cross section PR156A is located just upriver from PR156 and was established after the flood of 1978 when we thought PR156 had been washed away. The left bank is on the floodplain formed after the 1978 flood (Moody et al., 1999), which steps upward onto a Lightning-level terrace. The right bank is on the Lightning-level terrace (Moody and Meade, 2008). Section PR156A was resurveyed annually for 2 consecutive years 1979-1980, resurveyed in 1982, resurveyed annually during the 15 consecutive years 1984-1998. We made an abbreviated survey in 1999 when preparing to write the paper on floodplain ontogeny (Moody and others, 1999), and then conducted full surveys in 2011, 2012 and 2013.

The flood of 1978 left a wide sloping surface along and just below the right bank in 1978. This surface relatively quickly aggraded between 1980 and 1982 leaving a distinct quasi-level, approximately 40-m wide floodplain surface. This surface aggraded between 1982 and 1984 by about 10 cm, and then between 1984 and 1987 it expanded primarily along the riverward edge as a levee, which had about 25 cm of sediment added in 1993. The flood of 1995 left a nearly uniform deposit of 10-15 cm across the entire new floodplain (Moody and others, 1999). This was followed by a quiescent period from 1995 to about 2007. During the flood of 2008 (the largest flood since 1978) another 10-15 cm of sediment was deposited across the new floodplain and additional sediment was deposited to form a possible bench-like feature (Page and Nanson, 1982) at the base of the outer bank of the floodplain. Little has changed between 2008 and 2013.

Moody, J.A., and Meade, R.H., 2008, Terrace aggradation during the 1978 flood on Powder River, Montana, USA: *Geomorphology*, v. 99, p. 387-403.

Moody, J.A., Pizzuto, J.E., and Meade, R.H., 1999, Ontogeny of a flood plain: *Geological Society of America Bulletin*, v. 111, p. 291-303.

Page, K., and Nanson, G., 1982, Concave-bank benches and associated floodplain formation: *Earth Surface Processes and Landforms*, v. 7, 529-543.





PR156A. **Top.** 20 August 1986. View upriver. J. Moody (~1.9 m tall) is standing on the section at station 63, on top of newly (1986) deposited berm of sand, 0.3-0.4 m thick. Compare to photo taken 30 September 2013 on 'new' bench at station 58 and below the level of this berm.



PR156A. **Top.** 22 September 1994. View upriver from left bank. **Bottom.** 11 March 1995. View upriver from left bank during ice-break-up flow. J. Moody (~1.9 m tall) in red circle is standing approximately 10 m upriver of line of section. Red line indicates the approximate line of section.





PR156A. **Top.** 30 September 2013. View upriver from left bank at station 10. **Bottom.** 30 September 2013. View downriver from left bank at station 10.



PR156A. **Top.** 30 September 2013. View of left bank from station 58 on right bank. **Bottom.** 30 September 2013. View of right bank from station 10 on left bank. Line of section goes between cottonwood tree with two trunks (inside red circle).





PR156A. **Top.** 30 September 2013. View upriver from right bank at station 58 on new bench. Compare to photo taken on 20 August 1986. **Bottom.** 30 September 2013. View downriver from right bank at station 58 on new bench (see plots in data file).

